

CHALLENGES OF ICT SKILLS OF SME EMPLOYEES

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Abstract:

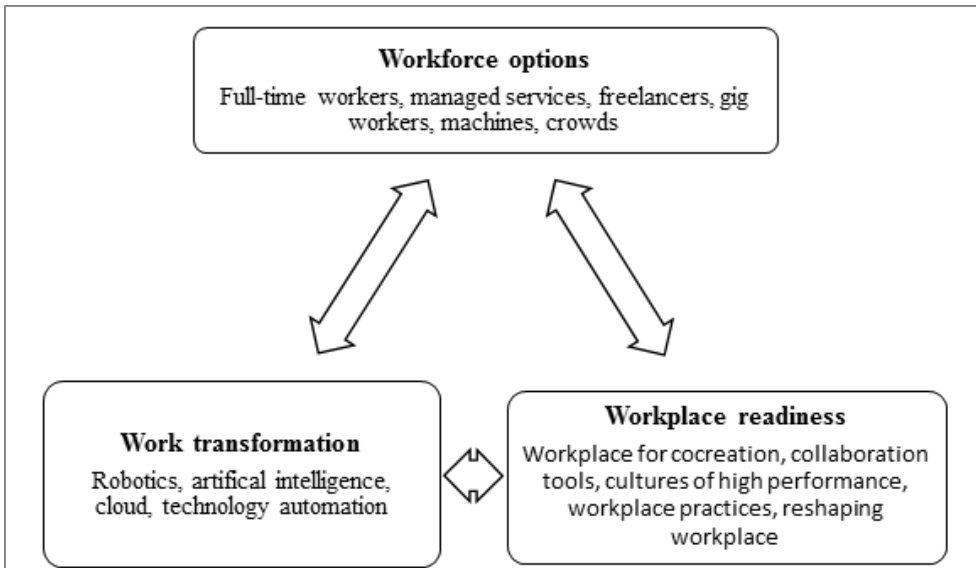
This paper explores the technology s role in the business addressing questions about the future of work in the organization. Based on a survey of 264 SMEs representatives, and interviews of 10 experts-business and technology leaders, this paper discuss the future of work in the organization influenced by the technological changes. Whether the organizations would employ in future workers on the basis of full employment arrangements improving their digital skills, or some platform workers-gig, crowed, machines, freelancers, and so solve the

problem of their coming human resource skill shortages gaps depends on their HR strategy. Therefore, in this paper IC variety of aspects of HRM are discussed in new digital age and in with it enhance the field by strengthening the knowledge of the SMEs organization's leaders considering the nature of the digital native workforce. The hypothesis of the research, that the human resource strategy of SMEs organizations in further medium run term would be significantly influenced by technological changes manifested in the six patterns of work, is confirmed. Descriptive statistical analysis and Fuzzy DEMATEL decision-making methods are used in the research. The paper is based on the theoretical perspectives and methodological approach, reflecting the diversity in this field with the aim to contribute to the development of the evidence base for HR in the digital age.

Keywords: Human resource, full time employees, machines, crowds, gig workers, freelancers, managed services, Fuzzy DEMATEL method, employment strategy

1. INTRODUCTION

Technology transformation to a new role in the organization requires the work of technology to change. The future of employment and work would be reshaped by the proliferation of disruptive technologies, market, and business strategy in human resources, global workforce and demographic trends.

Figure 1. Rethinking human resource, &workplace

Source: According to Deloitte

This paper focuses on the impact of these changes in HRM, in relation to changes to the workforce, to HRM in general and more specifically to the use of technology in delivering HRM activities of the organization in the medium turn. A well-trained workforce equipped with the skills required to adopt automation and AI technologies will ensure that SMEs enjoy strengthened productivity growth and that the talents of all workers are harnessed (Grozdanic, Radovic Markovic, Jevtic & Vukosavljevic 2013; Grozdanic, Radovic-Markovic & Jevtic 2013b; Grozdanic, Radovic-Markovic, Papic, Kvrpic & Jevtic 2012; Dimitrijevic, Vukadinovic & Grozdanic 2013). The ability of the organization to ensure the successful HR strategy within their business one will depend in large part on how well the workforce is trained and how adaptable companies and workers and their supply chains will prove to be in the face of multiple new challenges from automation adoption.

The paper on the structure provides an introduction, the literature review, research results on the future of human resource employment strategy of his organization, conclusions and references.

2. LITERATURE REVIEW

How can an organization leverage technology to redesign current work outcomes to focus on productivity and cost efficiencies, the jobs and roles change, skills and capabilities which will be needed would push the organizational HRM, HRM to react to technology changes and align its strategies and activities to this new labour market cohort.

Searching for adequate ways to recruit, develop, compensate, etc. such “digital employees” and moreover to integrate them with previous generations of employees would be very quickly one of the main activities of the organization. The “digital employees”, “digital work” and “digital employee management” are going to become the focal areas of digital changes of HRM. The identification of the actual digitally induced changes in attitudes, qualifications, behaviors and expectation of younger employees, makes the challenge for HRM of the organizations (Popovic, Kvrđić, Corić, Avakumović & Milosević 2020; Kvrđic 2018; Spasic & Simonovic 2019). The operative adaptation of HRM and strategy to changing workforce constitutes a step necessary to support organizations further on. Digital employees constitute a first notable challenge of the HR profession and the area of digital changes (D’Netto & Ahmed, 2012; Ng, Lyons & Schweitzer 2012; Powell, Piccoli & Ives 2004).

A larger change in the core subject matter of the HR profession assumes “digital employees”: labeled with various terms such as “digital natives” (Prensky 2001), “millennials” (Deal, Altman & Rogelberg 2010). A new generation

of people with distinctively different attitudes, qualifications, behaviors and expectations has been shaped by the interaction with digital technolog (Zakic et al. 2019). The literature on the phenomenon suggests that, this new cohort of people is generally characterized by marked digital qualifications, multitasking capabilities for networking, learning by doing and preference of instant gratifications and frequent rewards (Lancaster & Stillman 2002; Bennett, Maton & Kervin 2008; Helsper & Eynon 2010). A “digital work”, referring to the content as to the organization of work (Bawden 2008, 19), a broader set of technical as well as mental skills to systematically acquire, process, produce and use information (Nawaz & Kundi, 2010; Radović-Marković, Jevtić, Grozdanić, Marković & Vuceković 2014; Radovic-Marković, Grozdanic & Jevtic 2014b; Radović-Marković, Grozdanić, Kvirgić & Marković 2012) – turns out a crucial key qualification for more and more employees.

The digital forms of work organization change HRM can be seen on e-lancing (Aguinis & Lawal 2013) which organizes work via web-based marketplaces, replacing conventional employees by freelancing. It deeply changes and sometimes even questions “classic” HR functions such as recruiting or developing (Jevtic, Zakic, Popovic, Coric & Kvirgic 2020; Jevtic, Zakic, Popovic, Coric & Kvirgic 2020b; Jevtic & Grozdanic 2014; Jevtic, Dedjanski, Beslac, Grozdanic & Damnjanovic 2012; Jevtić, Dedžanski, Beslac & Grozdanic 2012b.). The challenge for e-HRM lies in recognizing the requirements that such digital forms of work organization pose on managing employees as well as further categories of contributors. A major change that visibly poses multiple new requirements of the HR profession makes the ongoing digitalization of work content and organization. The employees incorporated via digital self-service, and by establishing new kinds of cooperation subsumed as “virtual HR” (Lepak & Snell 1998; Strohmeier 2007; 2019) are result of the digitalization that affected human resource of the enterprises. The clear shift to incorporating technical implementation and application skills show new HR qualifications in many organizations (Hempel 2004). Web-based technological innovation within HR contributes to the rebuilding and re-

inforcement of the employee-HR department relationship as the potential outcomes of e-HRM.

Using institutional theory and a range of qualitative data, recruitment practices is strongly influenced by functional and social pressures existing in the wider society, reflected in the use of e-recruitment and digital HRM in general.

3. METHODS AND MAERIALS

3.1. Sampling

For the purposes of this work, an online experimental survey of the attitudes of SME organizations was conducted on the topic of their experiences and plans related to the missing digital skills and knowledge of employees. To that end, 264 companies in Serbia were interviewed in 2020, which makes up a sample of the survey. The basic results, processed by description, are presented in Table 1.

Table 1. Frequencies and percentage share

Description		No	%	
Legal form of the enterprise	Private independent	264	67.19%	100 %
	Public enterprise		20.31%	
	Part of large system		7.81%	
	Foreign company zeće		4.69%	
Years in business	From 1 to 5	264	28.13%	100 %
	From 6 to 10		40.63%	
	over 11		31.25%	
Industry sector	manufacturing		30.00%	100 %
	agriculture		10.00%	
	ICT		8.00%	
	Toursism, hosipality & travel		6.00%	
	Trade		10.00%	
	Logistics, infrastructure		6.00%	
	Conctuction		10.00%	
	Financial and insurance services		10.00%	
	Media, marketing, printing		5.00%	
	Personal services		5.00%	
Last year income	Less than €50,000		9.38%	100 %
	From €50,001 to €500,000		23.44%	
	From €500,001 to €2 mill.		56.25%	
	Over €2 mill.		10.94%	
Function of respondents	Owner		18.75%	100 %
	Manager		29.69%	
	Director direktor (chief of the ICT dep.)		40.63%	
	Other		10.94%	

The majority of the companies surveyed are private, independent enterprises, 67.19%, as well as those aged 6-10, from the industrial sectors of manufacturing, trade, construction and financial services. It is mostly erased with an income of 500,000 to €2 mill. 48.44% of the company's representatives who participated, a per function, the owner and manager of the company.

It is especially important that 40.63% of the representatives were heads of the company’s ICT department, gave their attitudes about digital skills and knowledge of employees and those who were, or would be needed to be engaged in the business process in the medium term.

Table 2. Employed in the last three years (2017-2020)

Description	% Of total	No	%
Full-time employees	62%	264	100%
Temporary employees/agency	38%		

In the last three years, 2017-2020, there have been 264 companies. On average, most had full-time employees, and fewer workers on temporary contracts, but with a tendency to increase this method of employment in the coming medium term.

Measuring instrument of the research is further six working patterns, as variables:

- 1. (C₁) - full time employees (abbr. as FTE)
- 2. (C₂) - machines (abbr. as M)
- 3. (C₃) - crowds (abbr. as C)
- 4. (C₄) - gig workers (abbr. as GW)
- 5. (C₅) - freelancers (abbr. as F)
- 6. (C₆) - managed services (abbr. as MS)

3.2. Methodology

For gathering the views of SME representatives who made up a sample of experimental research on Serbian territory in 2020, online questionnaire methods and descriptive statistics were used. To obtain the results of the research, the Fuzzy DEMATEL method was used (Zadeh 1965; Govindan, Khodaverdi & Vafadarnikjoo 2016; Vafadarnikjoo, Mobin, Salmon & Javadian 2015). This method is eligible for better definition of priorities in problem decision-making, using expert opinion in the organization. Valorization of paragraphs of 10 excellences on the topic of this paper was conducted through three levels of research in this method:

1. Select a team of experts, with good experience and knowledge in the appropriate field for strategic decision-making.

2. - Define criteria for evaluating problems, using the fuzzy matrix of direct assessments. Experts need to determine the relationship between the criteria (Table 3). They did so by on a scale of five comparisons, they gave their views, 0 (not affected), 1 (little influence), 2 (medium impact), 3 (highly influenced) and 4 (very high). On this scale, experts gave their linguistic assessments for the relationship between defined criteria. Intuitistic trapezoid fuzzy numbers were used for evaluation on this occasion.

3. – Due to the convenience of deciding, these trapezoid fuzzy numbers are further converted to crisp numbers (Table 3). Fuzzy intuitive direct relative matrix (M) is given (formula 1), and it reads:

$$M=1/4 (a_1+a_2+a_3+a_4) \quad (1)$$

Table 3. Intuitistic Fuzzy linguistic scale

Linguistic phrase Result	Influence	Intuitistic trapezoids Fuzzy number	Expected crisp value
No influence (NI)	0	(0; 0; 0; 0)	0
Low influence (LI)	1	(0; 0.1; 0.2; 0.3)	0.15
Medium influence (MI)	2	(0.3; 0.4; 0.5; 0.6)	0.45
High influence (HI)	3	(0.7; 0.8; 0.9; 1)	0.85
Very high influence (WHI)	4	(1; 1; 1; 1)	1

Source: According to Lin 2013.

3.5. Key results

A team of 10 experts compared the criteria: C1 - full time employees, C2 - machines, C3 - crowds, C4 - gig workers, C5 - freelancers and C6 - managed services for HR strategy. In Table 3 linguistic influence values were given to 10 criteria experts: C1, C2, C3, C4, C5 and C6 for future decisions of the company regarding human resources (T.4).

Table 4. Opinions of 10 experts on set criteria: C_1, C_2, C_3, C_4, C_5 i C_6

	C_1	C_2	C_3	C_4	C_5	C_6
C_1	NI, NI, NI, NI, NI, NI, NI, NI, NI, NI	HI, MI, HI, WHI, LI, HI, HI, MI, HI, WHI	MI, HI, HI, HI, MI, HI, MI, HI, HI, HI	HI, HI, MI, HI, WHI, HI, HI, HI, MI, HI	HI, MI, HI, WHI, MI, HI, WHI, HI, HI, HI	HI, MI, HI, WHI, MI, HI, WHI, HI, HI, HI
C_2	HI, MI, HI, WHI, HI, MI, HI, MI, HI, WHI	NI, NI, NI, NI, NI, NI, NI, NI, NI, NI	MI, HI, LI, MI, HI, WHI, MI, HI, LI, MI	MI, MI, HI, WHI, MI, MI, MI, MI, HI, WHI	HI, MI, WHI, HI, MI, HI, MI, MI, HI, WHI	HI, MI, WHI, HI, MI, HI, MI, MI, HI, WHI
C_3	LI, MI, HI, HI, HI, LI, LI, MI, HI, HI	MI, LI, WHI, HI, MI, LI, MI, LI, WHI, HI	NI, NI, NI, NI, NI, NI, NI, NI, NI, NI	WHI, HI, MI, WHI, HI, LI, WHI, HI, MI, WHI	HI, LI, HI, HI, MI, LI, WHI, HI, MI, WHI	HI, LI, HI, HI, MI, LI, WHI, HI, MI, WHI
C_4	LI, HI, WHI, WHI, HI, LI, LI, HI, WHI, WHI	MI, HI, MI, WHI, LI, LI, MI, HI, MI, WHI	MI, WHI, WHI, WHI, MI, HI, MI, HI, WHI, WHI	NI, NI, NI, NI, NI, NI, NI, NI, NI, NI	HI, LI, MI, HI, MI, HI, MI, WHI, WHI, WHI	HI, LI, MI, HI, MI, HI, MI, WHI, WHI, WHI
C_5	HI, WHI, HI, WHI, WHI, HI, MI, HI, MI, WHI	MI, HI, MI, WHI, MI, MI, MI, MI, HI, WHI	WHI, HI, HI, HI, HI, MI, HI, LI, HI, HI	HI, LI, MI, HI, WHI, HI, MI, MI, HI, WHI	NI, NI, NI, NI, NI, NI, NI, NI, NI, NI	HI, MI, HI, WHI, WHI, HI, MI, HI, MI, HI
C_6	HI, LI, WHI, HI, MI, HI, WHI, HI, MI, WHI	HI, LI, MI, MI, MI, HI, MI, WHI, WHI, WHI	WHI, HI, MI, MI, HI, WHI, WHI, HI, MI, HI	MI, LI, WHI, HI, MI, WHI, MI, MI, WHI, HI	LI, HI, MI, WHI, HI, LI, LI, HI, HI, WHI	NI, NI, NI, NI, NI, NI, NI, NI, NI, NI

In Table 5 the results of the impact of 10 criteria experts are given: C_1, C_2, C_3, C_4, C_5 , and C_6 for HR strategy of the organisation

Table 5. Impact results from 10 experts on set criteria: C_1, C_2, C_3, C_4, C_5 i C_6

	C_1	C_2	C_3	C_4	C_5	C_6
C_1	0,0,0,0,0,0,0,0,0	3,2,3,4,1,3,3,2,3,4	2,3,3,3,2,3,2,3,3,3	3,3,2,3,4,3,3,3,2,3	3,2,3,4,2,3,4,3,3,3	3,2,3,4,2,3,4,3,3,3
C_2	3,2,3,4,3,2,3,2,3,4	0,0,0,0,0,0,0,0,0	2,3,1,2,3,4,2,3,1,2	2,2,3,4,2,2,2,2,3,4	3,2,4,3,2,3,2,2,3,4	3,2,4,3,2,3,2,2,3,4
C_3	1,2,3,3,3,1,1,2,3,3	2,1,4,3,2,1,2,1,4,3	0,0,0,0,0,0,0,0,0	4,3,2,4,3,1,4,3,2,4	3,1,3,3,2,1,4,3,2,4	3,1,3,3,2,1,4,3,2,4
C_4	1,3,4,4,3,1,1,3,4,4	2,3,2,4,1,1,2,3,2,4	2,4,4,4,2,3,2,3,4,4	0,0,0,0,0,0,0,0,0	3,1,2,3,2,3,2,4,4,4	3,1,2,3,2,3,2,4,4,4
C_5	3,4,3,4,4,3,2,3,2,4	2,3,2,4,2,2,2,2,3,4	4,3,3,3,3,2,3,1,3,3	3,1,2,3,4,3,2,2,3,4	0,0,0,0,0,0,0,0,0	3,2,3,4,4,3,2,3,2,3
C_6	3,1,4,3,2,3,4,3,2,4	3,1,2,2,2,3,2,4,4,4	4,3,2,2,3,4,4,3,2,3	2,1,4,3,2,4,2,2,4,3	1,3,2,4,3,1,1,3,3,4	0,0,0,0,0,0,0,0,0

In Table 6 are given influence values of 10 criteria experts: C_1, C_2, C_3, C_4, C_5 and C_6 expressed via intuitionistic trapezoid Fuzzy numbers for HR strategy.

Table 6. Intuition trapezoid Fuzzy influences 10 experts on set criteria:
 C_1, C_2, C_3, C_4, C_5 i C_6

	C_1	C_2	C_3	C_4	C_5	C_6
C_1	(0; 0; 0; 0),	(0.7; 0.8; 0.9; 1),	(0.3; 0.4; 0.5; 0.6),	(0.7; 0.8; 0.9; 1),	(0.7; 0.8; 0.9; 1),	(0.7; 0.8; 0.9; 1),
	(0; 0; 0; 0),	(0.3; 0.4; 0.5; 0.6),	(0.7; 0.8; 0.9; 1),	(0.7; 0.8; 0.9; 1),	(0.3; 0.4; 0.5; 0.6),	(0.3; 0.4; 0.5; 0.6),
	(0; 0; 0; 0),	(0.7; 0.8; 0.9; 1),	(0.7; 0.8; 0.9; 1),	(0.3; 0.4; 0.5; 0.6),	(0.7; 0.8; 0.9; 1),	(0.7; 0.8; 0.9; 1),
	(0; 0; 0; 0),	(1; 1; 1; 1),	(0.7; 0.8; 0.9; 1),	(0.7; 0.8; 0.9; 1),	(1; 1; 1; 1),	(1; 1; 1; 1),
	(0; 0; 0; 0),	(0; 0.1; 0.2; 0.3),	(0.3; 0.4; 0.5; 0.6),	(1; 1; 1; 1),	(0.3; 0.4; 0.5; 0.6),	(0.3; 0.4; 0.5; 0.6),
	(0; 0; 0; 0),	(0.7; 0.8; 0.9; 1),	(0.7; 0.8; 0.9; 1),	(0.7; 0.8; 0.9; 1),	(0.7; 0.8; 0.9; 1),	(0.7; 0.8; 0.9; 1),
	(0; 0; 0; 0),	(0.7; 0.8; 0.9; 1),	(0.3; 0.4; 0.5; 0.6),	(0.7; 0.8; 0.9; 1),	(1; 1; 1; 1),	(1; 1; 1; 1),
	(0; 0; 0; 0),	(0.3; 0.4; 0.5; 0.6),	(0.7; 0.8; 0.9; 1),	(0.7; 0.8; 0.9; 1),	(0.7; 0.8; 0.9; 1),	(0.7; 0.8; 0.9; 1),
	(0; 0; 0; 0),	(0.7; 0.8; 0.9; 1),	(0.7; 0.8; 0.9; 1),	(0.3; 0.4; 0.5; 0.6),	(0.7; 0.8; 0.9; 1),	(0.7; 0.8; 0.9; 1),
	(0; 0; 0; 0)	(1; 1; 1; 1)	(0.7; 0.8; 0.9; 1)	(0.7; 0.8; 0.9; 1)	(0.7; 0.8; 0.9; 1)	(0.7; 0.8; 0.9; 1)
C_2	(0.7; 0.8; 0.9; 1),	(0; 0; 0; 0),	(0.3; 0.4; 0.5; 0.6),	(0.3; 0.4; 0.5; 0.6),	(0.7; 0.8; 0.9; 1),	(0.7; 0.8; 0.9; 1),
	(0.3; 0.4; 0.5; 0.6),	(0; 0; 0; 0),	(0.7; 0.8; 0.9; 1),	(0.3; 0.4; 0.5; 0.6),	(0.3; 0.4; 0.5; 0.6),	(0.3; 0.4; 0.5; 0.6),
	(0.7; 0.8; 0.9; 1),	(0; 0; 0; 0),	(0; 0.1; 0.2; 0.3),	(0.7; 0.8; 0.9; 1),	(1; 1; 1; 1),	(1; 1; 1; 1),
	(1; 1; 1; 1),	(0; 0; 0; 0),	(0.3; 0.4; 0.5; 0.6),	(1; 1; 1; 1),	(0.7; 0.8; 0.9; 1),	(0.7; 0.8; 0.9; 1),
	(0.7; 0.8; 0.9; 1),	(0; 0; 0; 0),	(0.7; 0.8; 0.9; 1),	(0.3; 0.4; 0.5; 0.6),	(0.3; 0.4; 0.5; 0.6),	(0.3; 0.4; 0.5; 0.6),
	(0.3; 0.4; 0.5; 0.6),	(0; 0; 0; 0),	(1; 1; 1; 1),	(0.3; 0.4; 0.5; 0.6),	(0.7; 0.8; 0.9; 1),	(0.7; 0.8; 0.9; 1),
	(0.7; 0.8; 0.9; 1),	(0; 0; 0; 0),	(0.3; 0.4; 0.5; 0.6),	(0.3; 0.4; 0.5; 0.6),	(0.3; 0.4; 0.5; 0.6),	(0.3; 0.4; 0.5; 0.6),
	(0.3; 0.4; 0.5; 0.6),	(0; 0; 0; 0),	(0.7; 0.8; 0.9; 1),	(0.3; 0.4; 0.5; 0.6),	(0.3; 0.4; 0.5; 0.6),	(0.3; 0.4; 0.5; 0.6),
	(0.7; 0.8; 0.9; 1),	(0; 0; 0; 0),	(0; 0.1; 0.2; 0.3),	(0.7; 0.8; 0.9; 1),	(0.7; 0.8; 0.9; 1),	(0.7; 0.8; 0.9; 1),
	(1; 1; 1; 1)	(0; 0; 0; 0)	(0.3; 0.4; 0.5; 0.6)	(1; 1; 1; 1)	(1; 1; 1; 1)	(1; 1; 1; 1)
C_3	(0; 0.1; 0.2; 0.3),	(0.3; 0.4; 0.5; 0.6),	(0; 0; 0; 0),	(1; 1; 1; 1),	(0.7; 0.8; 0.9; 1),	(0.7; 0.8; 0.9; 1),
	(0.3; 0.4; 0.5; 0.6),	(0; 0.1; 0.2; 0.3),	(0; 0; 0; 0),	(0.7; 0.8; 0.9; 1),	(0; 0.1; 0.2; 0.3),	(0; 0.1; 0.2; 0.3),
	(0.7; 0.8; 0.9; 1),	(1; 1; 1; 1),	(0; 0; 0; 0),	(0.3; 0.4; 0.5; 0.6),	(0.7; 0.8; 0.9; 1),	(0.7; 0.8; 0.9; 1),
	(0.7; 0.8; 0.9; 1),	(0.7; 0.8; 0.9; 1),	(0; 0; 0; 0),	(1; 1; 1; 1),	(0.7; 0.8; 0.9; 1),	(0.7; 0.8; 0.9; 1),
	(0.7; 0.8; 0.9; 1),	(0.3; 0.4; 0.5; 0.6),	(0; 0; 0; 0),	(0.7; 0.8; 0.9; 1),	(0.3; 0.4; 0.5; 0.6),	(0.3; 0.4; 0.5; 0.6),
	(0; 0.1; 0.2; 0.3),	(0; 0.1; 0.2; 0.3),	(0; 0; 0; 0),	(0; 0.1; 0.2; 0.3),	(0; 0.1; 0.2; 0.3),	(0; 0.1; 0.2; 0.3),
	(0; 0.1; 0.2; 0.3),	(0.3; 0.4; 0.5; 0.6),	(0; 0; 0; 0),	(1; 1; 1; 1),	(1; 1; 1; 1),	(1; 1; 1; 1),
	(0.3; 0.4; 0.5; 0.6),	(0; 0.1; 0.2; 0.3),	(0; 0; 0; 0),	(0.7; 0.8; 0.9; 1),	(0.7; 0.8; 0.9; 1),	(0.7; 0.8; 0.9; 1),
	(0.7; 0.8; 0.9; 1),	(1; 1; 1; 1),	(0; 0; 0; 0),	(0.3; 0.4; 0.5; 0.6),	(0.3; 0.4; 0.5; 0.6),	(0.3; 0.4; 0.5; 0.6),
	(0.7; 0.8; 0.9; 1)	(0.7; 0.8; 0.9; 1)	(0; 0; 0; 0)	(1; 1; 1; 1)	(1; 1; 1; 1)	(1; 1; 1; 1)

[illegible]

In Table 7 the opinion values of 10 experts on the set criteria of C1, C2, C3, C4, C5 and C6 expressed the expected crips values for HR strategy of the organization.

Table 7. Opinions of 10 experts on the set criteria of C1, C2, C3, C4, C5 and C6 expressed expected crips values

	C ₁	C ₂	C ₃	C ₄	C ₅	C ₆
C ₁	0, 0, 0, 0, 0, 0, 0, 0, 0, 0	0.85, 0.45, 0.85, 1, 0.15, 0.85, 0.85, 0.45, 0.85, 1	0.45, 0.85, 0.85, 0.85, 0.45, 0.85, 0.45, 0.85, 0.85, 0.85	0.85, 0.85, 0.45, 0.85, 1, 0.85, 0.85, 0.85, 0.45, 0.85	0.85, 0.45, 0.85, 1, 0.45, 0.85, 1, 0.85, 0.85, 0.85	0.85, 0.45, 0.85, 1, 0.45, 0.85, 1, 0.85, 0.85, 0.85
C ₂	0.85, 0.45, 0.85, 1, 0.85, 0.45, 0.85, 0.45, 0.85, 1	0, 0, 0, 0, 0, 0, 0, 0, 0, 0	0.45, 0.85, 0.15, 0.45, 0.85, 1, 0.45, 0.85, 0.15, 0.45	0.45, 0.45, 0.85, 1, 0.45, 0.45, 0.45, 0.45, 0.85, 1	0.85, 0.45, 1, 0.85, 0.45, 0.85, 0.45, 0.45, 0.85, 1	0.85, 0.45, 1, 0.85, 0.45, 0.85, 0.45, 0.45, 0.85, 1
C ₃	0.15, 0.45, 0.85, 0.85, 0.85, 0.15, 0.15, 0.45, 0.85, 0.85	0.45, 0.15, 1, 0.85, 0.45, 0.15, 0.45, 0.15, 1, 0.85	0, 0, 0, 0, 0, 0, 0, 0, 0, 0	1, 0.85, 0.45, 1, 0.85, 0.15, 1, 0.85, 0.45, 1	0.85, 0.15, 0.85, 0.85, 0.45, 0.15, 1, 0.85, 0.45, 1	0.85, 0.15, 0.85, 0.85, 0.45, 0.15, 1, 0.85, 0.45, 1
C ₄	0.15, 0.85, 1, 1, 0.85, 0.15, 0.15, 0.85, 1, 1	0.45, 0.85, 0.45, 1, 0.15, 0.15, 0.45, 0.85, 0.45, 1	0.45, 1, 1, 1, 0.45, 0.85, 0.45, 0.85, 1, 1	0, 0, 0, 0, 0, 0, 0, 0, 0, 0	0.85, 0.15, 0.45, 0.85, 0.45, 0.85, 0.45, 1, 1, 1	0.85, 0.15, 0.45, 0.85, 0.45, 0.85, 0.45, 1, 1, 1
C ₅	0.85, 1, 0.85, 1, 1, 0.85, 0.45, 0.85, 0.45, 1	0.45, 0.85, 0.45, 1, 0.45, 0.45, 0.45, 0.45, 0.85, 1	1, 0.85, 0.85, 0.85, 0.85, 0.45, 0.85, 0.15, 0.85, 0.85	0.85, 0.15, 0.45, 0.85, 1, 0.85, 0.45, 0.45, 0.85, 1	0, 0, 0, 0, 0, 0, 0, 0, 0, 0	0.85, 0.45, 0.85, 1, 1, 0.85, 0.45, 0.85, 0.45, 0.85
C ₆	0.85, 0.15, 1, 0.85, 0.45, 0.85, 1, 0.85, 0.45, 1	0.85, 0.15, 0.45, 0.45, 0.45, 0.85, 0.45, 1, 1, 1	1, 0.85, 0.45, 0.45, 0.85, 1, 1, 0.85, 0.45, 0.85	0.45, 0.15, 1, 0.85, 0.45, 1, 0.45, 0.45, 1, 0.85	0.15, 0.85, 0.45, 1, 0.85, 0.15, 0.15, 0.85, 0.85, 1	0, 0, 0, 0, 0, 0, 0, 0, 0, 0

In Table 8 the average opinions of 10 criteria experts were given: C1, C2, C3, C4, C5 and C6 for HR strategy. These sizes are given as the mean of the criterion response to crips numbers.

Table 8. Average opinions of 10 experts on set criteria: $C_1, C_2, C_3, C_4, C_5, C_6$

	C_1	C_2	C_3	C_4	C_5	C_6	Σ
C_1	0	0.73	0.73	0.785	0.785	0.8	3.8300
C_2	0.76	0	0.565	0.64	0.72	0.72	3.4050
C_3	0.56	0.55	0	0.76	0.66	0.66	3.1900
C_4	0.7	0.58	0.805	0	0.705	0.705	3.4950
C_5	0.83	0.64	0.755	0.69	0	0.76	3.6750
C_6	0.745	0.665	0.775	0.665	0.63	0	3.4800
Σ	3.5950	3.1650	3.6300	3.5400	3.5000	3.6450	21.0750

In Table 9, the values (N) of the normative initial impact matrix of 10 experts on the HR strategy for criteria are given: C_1, C_2, C_3, C_4, C_5 , and C_6 .

Table 9. Normative initial impact matrix of 10 experts on set criteria: $C_1, C_2, C_3, C_4, C_5, C_6$

	C_1	C_2	C_3	C_4	C_5	C_6
C_1	0	0.200274348	0.200274348	0.215363512	0.215363512	0.219478738
C_2	0.208504801	0	0.155006859	0.17558299	0.197530864	0.197530864
C_3	0.153635117	0.150891632	0	0.208504801	0.181069959	0.181069959
C_4	0.192043896	0.159122085	0.22085048	0	0.193415638	0.193415638
C_5	0.227709191	0.17558299	0.207133059	0.189300412	0	0.208504801
C_6	0.204389575	0.182441701	0.212620027	0.182441701	0.172839506	0

In Table 0 the criteria relationship matrix is provided: C1, C2, C3, C4, C5, and C6 for HR strategy.

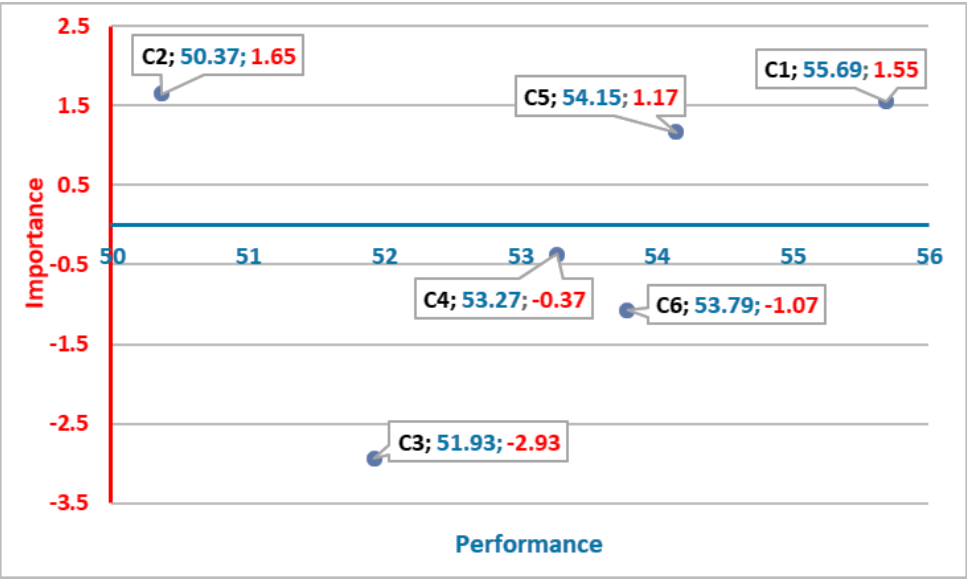
Table 10. Total Criteria Relationship Matrix. C_1, C_2, C_3, C_4, C_5 i C_6

	C_1	C_2	C_3	C_4	C_5	C_6	D	D+R	(D+R) rank	D-R	(D-R) rank	ω_i	W_i	W_i rank
C_1	4.71	4.40	4.94	4.84	4.78	4.95	28.62	55.69	1	1.55	2	55.7116	17.44%	1
C_2	4.45	3.85	4.47	4.39	4.35	4.50	26.01	50.37	6	1.65	1	50.3970	15.78%	6
C_3	4.16	3.76	4.08	4.16	4.10	4.24	24.50	51.93	5	-2.93	6	52.0126	16.29%	5
C_4	4.51	4.05	4.59	4.31	4.42	4.57	26.45	53.27	4	-0.37	4	53.2713	16.68%	4
C_5	4.74	4.24	4.78	4.67	4.45	4.78	27.66	54.15	2	1.17	3	54.1626	16.96%	2
C_6	4.50	4.06	4.57	4.45	4.39	4.39	26.36	53.79	3	-1.07	5	53.8006	16.85%	3
R	27.07	24.36	27.43	26.82	26.49	27.43	/	/	/	/	/	/	/	/
Sum	/	/	/	/	/	/	159.60	319.20	/	0.00	/	319.36	100.00%	/

Figure 2 gives a Causal Diagram on the performance and the significance of the criteria C1, C2, C3, C4, C5 and C6 per (Vafadarnikjoo, Mobin, Salmon & Javadian 2015) HR strategies of the organizations. It can be seen that based on the importance and its normative ranking sizes that:

- The most significant criterion for the number of experts set is: C1 - full time employees 55.7116 (17.44%, (1),
- Then criteria C5 - freelancers 54.1626 (16.96%, (2),
- C6 - managed services 53.8006 (16.85%, (3),
- Criterion C4 - gig workers 53.2713 (16.68%), (4),
- Criteria C3 - crowds 52.0126 (16.29%), (5), and
- Finally criterion C2 - machines 50.3970 (15.78%), (6).

Figure 2. Causal Diagram about set criteria: C_1, C_2, C_3, C_4, C_5 i C_6



4. DISCUSSION AND CONCLUSIONS

HR strategy is not limited; therefore it is necessary to find measures and ways to match the criteria of C1 - full time employees, C2 - machines, C3 - crowds, C4 - gig workers, C5 - freelancers and C6 - managed services. The results of the experts' opinions on the set criteria for HR strategy are displayed in the Causal Diagram, showing the importance of the criteria on the axle (D+R). Success factor that is ranked for the following significance: the biggest impact on HR strategy of surveyed enterprises in the future medium term would have the factor C1 - full time employees. It would not be over 60% as in previous time, but still the highest in the structure of further employment. After that the category C5 – freelancers are getting higher importance, than C6 - managed services, C4 - gig workers and C3 – crowds. Ultimately C2 – machines, what type of the working pattern and employment in the HR strategy of the enterprises would also rise but less than all other types. On the axle (D-R) the cause of effects – i.e. adoption of

critical factors for HR strategy demonstrates the following importance of the new digital, platform work and types of employment for the enterprise way they plan to overcome the digital skill gap of their employees: the biggest impact would have the factor C2 – machines, then C1 -full time employees, then C5 – freelancers, C4 - gig workers and C6 - managed services at the end of C3- crowds.

It can be concluded with, that the Human resource strategy decision-making model using the Fuzzy DEMATEL method has shown that the method was suitable for solving such strategic problems in the so-called, a gentle environment, as it can investigate any similar complex decision-making problem. The results, obtained by the opinion of 10 experts on the set criteria of C1 - full time employees, C2 - machines, C3 - crowds, C4 - gig workers, C5 - freelancers and C6 – can be well expressed through the Causal Diagram when analyzing HR strategies.

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IZAZOVI IKT VEŠTINA ZAPOSLENIH U MALIM I VELIKIM PREDUZEĆIMA

Sažetak:

Ovaj rad istražuje ulogu tehnologije u poslovanju rešavajući pitanja o budućnosti rada u organizaciji. Na osnovu istraživanja 264 predstavnika malih i srednjih preduzeća, i intervju a 10 eksperata - poslovnih i tehnoloških lidera, ovaj rad govori o budućnosti rada u organizaciji pod uticajem tehnoloških promena. Da li će preduzeća u budućem srednjegođnom periodu zapošljavati radnike u stalnom radnom odnosu uz edukaciju za poboljšnje njihovih digitalnih veština, ili će više koristiti neke radnike na platformi, frilensere, gig radnike, mašine kako bi nešavali nedostatak ovih, zavisice od njihove HR strategije. Zbog toga ovaj rad i govori o raznim aspektima HRM-a u novom digitalnom dobu i jaćanju znanja lidera organizacije SMEs uzimajući u obzir prirodu digitalne radne snage. Hipoteza istraživanja, da će strategija ljudskih resursa malih i srednjih preduzeća u daljem sred-njoroćnom periodu biti pod jakim uticajem tehnoloških promena koje se manifestuju u šest obrazaca

rada je potvrđena. Metode korišćene u radu su deskriptivna statistika, i fuzzy DEMATEL ekspertska metoda za donošenja odluka. Rad je zasnovan na teorijskim perspektivama i metodološkom pristupu digitalizaciji rada, koji odražava raznolikost na tom polju sa ciljem doprinosa daljem izučavanju i razvoja baze za HR u digitalnom dobu.

Ključne reči: ljudski resurs, stalno zaposleni, mašine, crowds, gig radnici, frilenseri, mašine, kontrolisane usluge, Fuzzy DEMATEL metoda, strategija zapošljavanja.

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